



## RAILWAY STATISTICS.

(Abridged from a pamphlet, entitled *Railway Reform*,—copies of which have appeared in the *Mining Journal*.)

**MANCHESTER AND BIRMINGHAM**—40 miles : The Act for this company was passed in June, 1837, and the authorized capital in shares and loans was £3,000,000. From the station in St. Peter's-street, Manchester, the line proceeds in a southerly direction, passing near Chaddie and Winton to its termination at Crewe, where it joins the Grand Junction Railway. The Macclesfield branch leaves the main line in the parish of Chaddie, and proceeds through Adlington and Tatton, to its eastern termination near Macclesfield, eleven miles. The principal viaducts are those at Manchester and Stockport, and some of the cuttings are very heavy. The speculation has not turned out well, the shareholders receiving only about 2 per cent. on the capital invested. The number of passengers for the half-year ending 31st December, 1841, was—first class, 8115; second class, 25,894; third class, 262,681—total, 291,390.

**MANCHESTER AND BOLTON**—10 miles : This company obtained their Act in August, 1831, with an authorized capital of £770,000. The line proceeds from the station in New Bailey-street, Salford, passes under the Oldfield-road, near the Liverpool and Manchester Railway, thence in a road parallel to the canal, passes Pendleton and Clinton, to its termination at Bolton. The rugged nature of the country intersected by this line has rendered the earthworks very heavy ; there is one tunnel 300 yards in length, and thirty-three bridges. The returns pay about 5 per cent. on the capital. The number of passengers for the six months ending 31st December, 1841, was—first class, 39,394; second class, 92,654; third class, 39,410—making a total of 162,338.

**MANCHESTER AND LEXINGTON**—30 miles : The Act for the incorporation of this company was passed in July, 1836, authorizing a capital of £3,249,000., of which £1,000,000. have been expended. The line runs in a north-easterly direction from the station at Less street, Manchester, towards Rosthwaite and Littleborough, on to Winterbottom Lee, and the Valley of Todmorden, thence to Charslton and Powerby bridge, passing Brighouse, Huddersfield bridge, and Wakefield to its junction with the North Midland at Normanton. The cuttings and embankments are exceedingly heavy, the principal being the Mosslyn cutting and the Huddersfield embankment ; there are upwards of 100 bridges and viaducts, and eight tunnels, the longest of which is above one and a half miles long ; the engineering difficulties on this line have not been exceeded by any line in the kingdom. The number of passengers for the six months ended 30th June, 1842, was—first class, 69,030; second, 360,374; third, 747,192—making a total of 1,127,396.

**MARSHFIELD AND CARLISLE**—39 miles : Only twenty miles of this line are yet completed, the whole will, probably, be finished in the early part of 1844. Nearly the entire revenue is derived from the carriage of coal. The number of passengers from the opening of the line on the 20th June, 1841, to the close of the year was only 747.

**MIDLAND COAST LINE**—87 miles : This line brings into immediate communication Nottingham, Derby, Leicester, and Rugby, and forms a main link in the connection of the metropolis with the north ; the Act was passed in June, 1836, authorizing a capital of £1,230,000. It was opened in July, 1840. The line from Rugby proceeds past Broughton, Leicester, Narow, Loughborough, to Narow, and thence in a direct course to Derby ; the Nottingham branch leaves at Long Eaton in a south-easterly direction by Beeston to Nottingham. There are some heavy cuttings, and 100 bridges and viaducts, on this line ; the principal cuts being over the Avon, Trent, Soar, and Wreake ; there are also three short tunnels. The returns pay about 3 per cent. on the capital expended, and the number of passengers for the year ending June 30, 1842, was 322,429.

**MOWLAND AND KIRKINTYLOCH**—5 miles : The revenue on this line arises from the carriage of coal, iron, and limestone ; there are no passengers carried, and the returns are about 10,000/- per annum.

**NEWCASTLE AND CARLISLE**—41 miles : The act of incorporation passed in May, 1839, the capital authorized was £100,000., but the actual cost has been £100,000. more. The line was opened throughout in 1839. Leaving the Newcastle station, the line passes north of the Tyne, by Blaydon, Wylam, Stockfield, Foulerside, Hardin Mill, Greenhead, Hea Mill, and Bentsby, to the Carlisle station. There are some very heavy works on this line, the principal of which is Coquet-hill cutting, and 100 bridges and viaducts ; Curby-bridge, over the Eden, is 110 feet high. The gross receipts in 1837 were £15,000.; 1838, £20,000.; 1839, £1,4000.; and last year they had fallen to £7,000. The returns pay 4 per cent. on the capital, and the number of passengers in the year ending June 30, 1842, was 261,748.

**NEWCASTLE AND YORK BRANCH**—7 miles : The Act for the incorporation of this company passed in 1838, authorizing a capital of £30,000., and the line was opened in 1841. Leaving Pilgrim street, Newcastle, the line proceeds nearly east, through All Saints, Willington, and Christon, passing by Wall's End, the coalts from which places are well known in the London market. There are thirty-five bridges and viaducts, and the Ouse, Burn, and Willington Dene viaducts are worthy of notice. The number of passengers for the year ending 30th June, 1842, was 764,430. This railway pays 6 per cent. on the capital.

**NOTTSMAN AND EASTERN**—32 miles : This railway was originally intended to form a communication between London and York by Cambridge, Peterborough, and Lincoln. At present it only extends to Bishop's Stortford, and as the London and Birmingham Company have obtained a bill for a branch to Peterborough, it is doubtful if this line will be carried further. The Act of Incorporation passed in July, 1838, the capital being £1,000,000. Leaving the Essex County line near Stratford, three and a half miles from Stratford, the railway proceeds in a north-west direction through Lawleyton, by Tiptonham Mills, through Ropton, and near the bridge, crosses the river Stort, and proceeds direct to Bishop's Stortford. The Lee Valley embankments, and the Ropton cutting are the principal works. The number of passengers calculated on this line was 1,000,000 per annum, while not more than half that number have travelled by it. In 1842, the number was 429,000. The trains travel on this line faster than any in the kingdom, and the returns pay about 4 per cent. on the capital.

**NOTTS MAN & YORK**—70 miles : The Act for this company was passed in July, 1838, and the line was complete in 1840; the amount expended to be raised was £1,000,000. Leaving the station at Derby, the line proceeds to Helpston, Clay Cross, to the east of Chesterfield, on to Rotherham and Mexborough, Station (which is the station for Doncaster), and by Scunthorpe and Woodhead to Leeds. The earthworks on this line were exceedingly heavy, and there are seven tunnels, one at Clay Cross above a mile in length, and 150 bridges and viaducts. The returns to this company pay about 3½ per cent. In 1841, the working expense of this line was £14,000., and in 1842 it was reduced to £1,000. The total number of passengers in the year ended June 30, 1842, was 870,000.

**NOTTS UNION**—23 miles : The Act for the southern portion of this line, called the Wigton branch, was obtained in May, 1838, and in 1831 an Act was obtained for a line from Wigton to Fleetwood, to connect these places with Liverpool and Manchester ; the two lines were subsequently united under the name of the North Union ; the amount of capital was £200,000. The line leaves Stock-street, Fleetwood, and passes Woodhead End, Lytham, Cophol, Skewick, and Wigton, terminating in Parkside, where it joins the Liverpool and Manchester line. The earthworks on this line are heavy, the principal being at Ribble Valley and Penwitham Hill ; there are several bridges and one short tunnel. This company pays about 4½ per cent., and the capital expended up to the last half-yearly meeting was £12,000. There are no third-class passengers, and the total number during the year ended 30th June, 1842, was 100,000.

**RAILWAYS IN SCOTLAND.—Parliamentary notices have been affixed to the doors of the parish churches in Edinburgh for bills to be carried through Parliament in the ensuing session.—1. For the prolongation of the Edinburgh and Glasgow Railway to the North Bridge ; 2. For the erection of a railway from South Bridge, Edinburgh, to Berwick upon Tweed, with a branch line to Haddington ; and 3. A branch line of railway, from the Edinburgh and Newcastle line to the West Shore at Leith, east to Gourock Pier—the particulars of which, see prospectus in another column.**

**PATENT HORSE-CAR INVENTION**.—A very neat and superior invention has just been introduced by Mr. James Clark, of Finsbury-street, which dispenses the advantages of many of the costly patented cars, without their expense or complexity. It is in form of a common road carriage, the cover of which opens by easily pressing a small spring in front ; the interior of this cover contains a set of horse-carriage, pressed forward by spring, which, when shut, automatically seats the carriage, protecting the carriage from dust, and allowing the tail to retain its usual proportion to the body. Persons in the habit of writing will appreciate this simple, yet elegant, contrivance, which, at the expense of a common carriage, places at their command one equal to the others in those which, from their richness and complex construction, are to the first carriage expensive, and afterwards continually liable to get out of repair. It is manufactured in various shapes and sizes for the meeting-room, library, drawing room, &c., and will be done most with an elaborate care.

**Water-Tube Pipe**.—Stevens' patent water-tube pipe is a vacuum—i.e. it gives and keeps the water, airless, and watertight, with the greatest security, the water being held water-tight ; which will render it conduct to all, that a good water-tube pipe can be produced with less complication than by means of a spring or weight, thereby rendering this kind of tube-pipe, by its simplicity, less liable to get out of order, and more certain of performing its office, provided it have a sufficient and sufficient air-space to allow for the change of temperature, which is accommodated to this kind of air-tight and simple construction. It is further simplified by a new method of giving motion to the tube or tubes, which is done without the aid of valves or pumps. In addition to these advantages, it requires no winding up, as it may be kept in permanent motion, by attaching it to a clock-work, or by winding up in various other ways, as a clock-drum is singly sufficient to keep it going.—*Engineering and Builder's New York Register*.

## NORTH BRITISH RAILWAY.

The directors of this company (a notice of the formation of which we published on the 2d of September last) having come to the decision to carry the projected line to the north of the Garleton Hills, instead of taking in the risk district of East Lothian, by Haddington and Dunbar, an important meeting was held to take the matter into consideration, by the magistrates and proprietors throughout the district, at the Assembly-rooms, Haddington, on the 17th ult., and resolutions passed, which will be found in our advertising columns. Ever since the first proposal for connecting Edinburgh with the south, the route by Haddington has been looked upon as the most legitimate, and the expressed intention of the directors to deviate from this line has caused much surprise, and should it be persisted in, will raise a powerful opposition to the bill in Parliament, and an endeavour to obtain a separate line to forward the interests of parties who think themselves aggrieved. As long since as 1825, such a measure was projected by the inhabitants, and in 1836 a company was formed, and surveys commenced by Messrs. Grainger and Miller—Mr. George Stephenson being employed as consulting engineer. It was called the Edinburgh, Haddington, and Dunbar Railway Company, and prospectuses were published, but from various causes nothing effectual was done. Mr. Stephenson carefully examined the line by Haddington, and that north of Garleton Hills, and gave his unqualified opinion as to the superiority of the former, as being shorter, and also as opening facilities for a larger extent of population, and taking a richer and more valuable tract of country, whilst there is not the slightest engineering difficulty in the way. The meeting was numerously and respectfully attended, and the opinion appeared unanimous in favour of the Haddington line, and a determination expressed to follow up the measures until they had secured for that burgh those facilities of railway transit which her position justly demands. Mr. George Stephenson has been ordered to make a new survey, to enable a fair case to be laid before the Government engineer, who is shortly expected in Scotland on the subject, and previous to publishing the results, the company's agents were written to, stating the wish of the party to support the railway generally, and requesting to be informed if it was the company's intention to take the case into consideration ; the only reply was, that the line might be considered as settled to be carried north of the Garleton Hills. A deputation from the Haddington committee have since waited on the directors, but without success ; they only stating generally that the line should be so formed that the interests of the county should not suffer. A large meeting of the landholders will be held in a few days, who are expected to approve of the proceedings at the former meeting, and it is to be hoped the company will yet re-consider the claims of the Haddington district, to prevent much opposition and expense, and by which they will obtain a line most generally adapted to the public benefit, and likely to pay the shareholders a fair interest for the capital invested.

**SHEFFIELD AND CHESTERFIELD RAILWAY**.—It has caused considerable surprise that the important manufacturing town of Sheffield should have been left in its peculiar situation as regards railway communication. With its extensive population, and being the very emporium for the manufacture of cutlery for all parts of the world, it is certainly strange that during the formation of the great northern and midland lines of railway, the town of Sheffield should have been left out of the direct line of communication. It appears an anomaly that the traveller from such a town as this, who wishes to go southward, is obliged to submit to a journey of six miles direct north to the Mansfield station, and all the uneasiness and waste of time attendant on change of carriages, luggage, &c., yet such is the fact, and for all the really useful and accommodatory purposes of a railway, Sheffield seems to have been thought as little of, as any village consisting of a few cottages. It is, therefore, not surprising that a desire should begin to be expressed for this important town to join in the real benefits of railway communication, and a meeting for the purpose was held on Wednesday, the 28th ult., at the Cutlers' Hall, which was numerously attended, and resolutions were passed for a junction line to connect the Sheffield, Ashton-under-Lyne and Manchester, and North Midland Railways, forming a communication from Manchester, through Sheffield, to the Midland Counties, and thus bringing the travelling communication into the town, who are taken by the present lines in a course entirely away from it. It will also reduce the distance between Sheffield and Chesterfield from twenty-two miles to eleven, and open a field for the transit of mineral property, consisting of iron, coal, Derbyshire lime, the well-known Dronfield coke, manufactured goods, and agricultural produce, from districts which have, up to the present time, been entirely lost sight of among the railway companies in this part of the kingdom. There are no particular engineering difficulties on this line ; the capital required will be £200,000., in shares of £10. each, and from the most careful calculations, it is assumed that the traffic will certainly pay it per cent. on the capital though it is not improbable that it will realize much more.

**RAILWAYS IN IRELAND**.—A proposition is at length brought before the public for the establishment of Irish railways—a measure which must carry with it an immense amount of benefit to the population of all the districts through which any line may pass ; while England, Scotland, and all the states of Europe, have been doing their utmost to carry out this most perfect of hitherto-discovered means of transit, to say nothing of America, who has outstripped us all, poor Ireland has been left entirely in the lurch, and, at the present moment, may be said to possess only a mere pleasure railway outgrowing in this part of the kingdom. There are no particular engineering difficulties on this line ; the capital required will be £200,000., in shares of £10. each, and the Government, it is expected, will bear a considerable portion of the burden. The benefit which most accrues to those parties who might feel disposed to become shareholders in the most encouraging description. Mr. M'Nail, the engineer, who has surveyed the line, considers it might be completed for 10,000/- per mile, and from the extreme extension of the country through which it will pass, and the character of all engineering difficulties, it appears highly probable such a mileage would not be exceeded. We sincerely trust this attempt to introduce the system into Ireland will meet with the desired success, and happy shall we be to record the fact of general having been booked, and the formation of the line commenced—a proceeding which will open a new field for Ireland's industry, tend to place her population in a very superior situation to what they at present enjoy, and give increased means for the disposal of her varied and prolific agricultural produce.

**MR. BROWNING'S RAILWAY**—(From a Correspondent).—The most complete success has been obtained by the first application of atmospheric pressure to locomotion ; for the last fortnight from Dulley to Kingstown, the trains have been running regularly with a precision and freedom from the slightest appearance of vibration, which proves the principle of atmospheric pressure to be fairly established, and no longer a matter of speculation. Successful as the experiment is, much improvement is in contemplation, and which, when carried out, will render this power of mere locomotion still more available and effective. We have brought into use a speed of fifty miles per hour has already been exhibited with ease, and with us for the first time human-sense to the passenger, that the speed of the train is gradually reduced without his knowledge that any change is taking place. Signals to regulate the movements of the persons in charge of the hand engine, are at present obliged to be given by flags from the carriage while travelling, but it is intended to lay down an electrical communication, by which instantaneous communication can be made between the travelling carriage and the stationary engine, and the speed regulated, or the train stopped at an instant's warning. Arrangements are being made to extend this line to Bray, and a speed of eighty miles per hour has already been exhibited with ease, and with us for the first time human-sense to the passenger, that the speed of the train is gradually reduced without his knowledge that any change is taking place. Signals to regulate the movements of the persons in charge of the hand engine, are at present obliged to be given by flags from the carriage while travelling, but it is intended to lay down an electrical communication, by which instantaneous communication can be made between the travelling carriage and the stationary engine, and the speed regulated, or the train stopped at an instant's warning.

**THE ATOMOSPHERIC RAILWAY**—(From a Correspondent).—The most complete success has been obtained by the first application of atmospheric pressure to locomotion ; for the last fortnight from Dulley to Kingstown, the trains have been running regularly with a precision and freedom from the slightest appearance of vibration, which proves the principle of atmospheric pressure to be fairly established, and no longer a matter of speculation. Successful as the experiment is, much improvement is in contemplation, and which, when carried out, will render this power of mere locomotion still more available and effective. We have brought into use a speed of fifty miles per hour has already been exhibited with ease, and with us for the first time human-sense to the passenger, that the speed of the train is gradually reduced without his knowledge that any change is taking place. Signals to regulate the movements of the persons in charge of the hand engine, are at present obliged to be given by flags from the carriage while travelling, but it is intended to lay down an electrical communication, by which instantaneous communication can be made between the travelling carriage and the stationary engine, and the speed regulated, or the train stopped at an instant's warning.

**THE FRIEDRICH'S RAILWAY**.—The lowest annual value of rail passenger traffic in England in 1840, being the county of Shropshire, and the highest the county of Middlesex, 1840. In Wales, the lowest is the county of Monmouth, £750.; and the highest is the county of Flint, £275.

## PLYMOUTH, DEVONPORT, AND EXETER RAILWAY.

A numerous and highly influential meeting on behalf of this undertaking was held at Webb's Royal Hotel, Torquay, on Saturday morning last, and a unanimous desire to promote its completion appeared to pervade all present.—EDWARD VIVIAN, Esq., was called to the chair, who, in opening the business, said he could have wished a larger land proprietor had been placed in that situation ; still, it must not be inferred from circumstance that the landowners generally were averse to it—the contrary was the case, the proprietor in the neighbourhood being highly in favour of the line. The benefits to the inhabitants of Torquay would be of the most extensive nature, by a great influx of visitors ; but those who were about taking shares should not, perhaps, look so closely to the question of divided (though there was little fear on that score), but to the influence of the line would have on the town : he would request Mr. Gill (the chairman of directors) to lay any information he might possess before the meeting.—THOMAS GILL, Esq. (M.P. for Plymouth) then detailed the history of the proposed line, from its projection in 1836 to the present time. In that year several lines were surveyed, and shared to the amount of £350,000., taken up, but still it was found impossible to carry it out. In 1840 executions were renewed, but were ineffectual ; and, failing in every attempt to carry out the object as an independent company, in 1842, a provisional committee was formed, with powers to enter into arrangements with the Great Western, Bristol and Exeter, and Bristol and Gloucester Companies, and the agreements which had been entered into, he regarded as most favourable for the interest of all parties.—MR. BUNUEL described the course of the line, and stated that, although the fifty miles from Plymouth to Exeter passed through a better description of property than any similar length of line he was acquainted with, yet, with only one or two exceptions, the landowners were favourable to its construction, and though Devonshire appeared a difficult county for a railway he had not found more than the average of engineering difficulties.—Resolutions were passed expressive of the opinion that the formation of the railway would be beneficial to the county at large, approving of the course as explained by Mr. Brunel (the same as we described in a former Number), and calling upon all parties interested in the prosperity of the districts through which it would pass, and the county generally, to lend their utmost support, and a most unanimous feeling was exhibited, to carry out the proposal in a substantial and effective manner. We are sorry to observe, from the local press (and which, indeed, is not unusually the case, when any great measure is about being carried), that some parties are already endeavouring to cause division among the supporters of this line, by getting up petty opposition to the situation of some of the stations, after the most minute investigation has been given to this part of the subject by the engineers of the three companies, as well as those of the company ; it is to be hoped, however, such mean opposition, by parties, evidently personally interested, will be successfully set aside, and the general interest of the line be the paramount object of those who have to carry it into completion.

## RAILWAY REFORM ASSOCIATION—BLACKWALL RAILWAY.

A meeting took place on Monday evening, at the George Tavern, New-road, Saint George's-in-the-East, at eight o'clock, when Dr. BLOOMFIELD was unanimously called to the chair.—The CHAIRMAN opened the proceedings, by observing that their principal business that evening was to hear the report of the deputation which had been appointed to wait on Dr. Bowring, M.P., for the purpose of soliciting that gentleman to take the chair at a public meeting intended to be called by the association, with the view of more efficiently rousing public attention to the very great abuses in the present system of railway management in this country.—MR. MORROW said, that the deputation that day had the pleasure of a long interview with Dr. Bowring ; they had been received in the most courteous and friendly manner by him, and were happy to find that he (Dr. Bowring) perfectly agreed with them in their object, and also approved of the manner in which the association had hitherto conducted their proceedings. They may, therefore, depend on his valuable aid both in and out of Parliament, and his assistance in getting for the public more of the advantages which railway travelling is capable of conferring on the country, especially in regard to the middling and poorer classes. He (Dr. Bowring) advised them to go on in the way they were doing for a little while longer, for he was certain that they (the association) were doing great good by causing much public discussion on the subject ; that a little abuse ought not to be regarded, come from what quarter it might ; they should, rather, expect good from it. He (Dr. Bowring) had no objection to take the chair at any public meeting the association would call, for the purpose of petitioning Parliament for a committee of inquiry into the workings of the whole railway system of this country. He (Dr. Bowring) was convinced that the public had much cause to complain of the little regard that had been taken of their convenience and interest in all the railway bills that had passed through Parliament ; he was, however, going out of town for a few days, but on his return, the deputation might have another interview with him, when some definite course of proceedings might be determined upon. Dr. Bowring had given them some very good advice ; he had reminded them that it would not be wise to seek to gather fruit before it was sufficiently ripe ; that before they had a public meeting for the purpose of action, it might be well to work a little longer in the way that they had been doing. He (Dr. Bowring) feared that but little was to be expected from Government, without they were driven to it by the amount and strength of public opinion ; that one great object ought to be to work upon the public mind, to create an enlightened opinion in favour of the valuable reform they (the association) were seeking. In the meantime, he (Dr. Bowring) would use his best endeavours to forward the interests of all parties.

MR. BROWNE said that it would be unnecessary for him to add anything to the very accurate and detailed account which his friend, Mr. Morton, had given of their interview with Dr. Bowring. It would completely settle the contemptible slander about the "confiscation of property," which a certain journal, through interested motives, had stated to be their object. Neither he, nor any other member of the association—one, in fact, anybody else—had ever uttered such nonsense. The Government could no more interfere with the Blackwall, or any other railway, than they could interfere with any man's private property, nor would the legislature adopt a different principle in dealing with railway property from that of any other species of property. They had not met there for the purpose of complaining of the management of the Blackwall Railway—for it ; the railway had been productive of considerable benefit to the public ; a passenger could travel now from London to Blackwall for £1., in one-third of the time which he could formerly do when it cost him £1. by coaches—therefore, whatever might be the case with other railways, the establishment of the Blackwall had certainly been productive of good. But the question was not, had the public gained by the construction of this and other railways, but had they derived from them all the benefit which they were capable of yielding ? If any arrangement could be made by which the empty trains could be filled that they now board rattling empty by them, the fare reduced to 10. instead of £1., and the unfortunate shareholders to receive a dividend who now receive nothing, would any one deny that a great public good would be effected, which, in the words of Mr. Newland Hill, would be "second to none." The same principle was applicable to all other railways, in the same manner as the Blackwall, and he trusted that before that time twelvemonth the new system, as promulgated by the *Meeting of Railway Reform*, would be established, and that a poor man would be able to travel in comfort from here to Birmingham for £1. 10s. instead of £1., under the present system, exposed to every discomfort and want of accommodation, at least. Would not a change be most beneficial to all classes of the community ? But was the prospect of such a change visionary ? The best answer to that question would be, to quote the different organs of public opinion which had attended this great subject of commercial reform—from the *Morning Herald*, one of the great organs of the Government, the aristocracy, and the middle classes, to *Tait's Magazine*, the other supporter of radical opinions and reform in every branch of the state.—MR. JACKMAN said that the public mind required to be aroused and enlightened on this important subject ; he would, therefore, move the following resolution :—That this association do direct its efforts to the holding of meetings in the districts for discussion, and the delivery of lectures on the evils arising from the present management of railways.—MR. HUNTER seconded this resolution, which passed unanimously.—MR. T. SMITH moved this resolution.—That Alexander Morton, Esq., be requested to deliver a lecture at this place on Monday next on railway reform, discussions from the park being invited afterwards. He knew no greater organ of doing justice to the subject than Mr. Morton ; the extensive connections which he (Mr. Morton) had in the manufacturing districts, and his perfect acquaintance with those parts where the evils of the railway system were most felt, peculiarly qualified him for communicating the important facts of enlightening the public mind on this subject.—MR. W. A. GILL seconded



**MR. HENRY ENGLISH,** of No. 5, SHORTER'S COURT, THROGMORTON STREET, CITY, having at the instance of numerous friends, made the necessary arrangements for continuing the business of AGENT in the PURCHASE and DISPOSAL of MINERAL and other PROPERTY, as also that of STOCKS and SHARE-BROKER, is induced to extend the favour of his support to the subscribers to the Mining Journal, Railways and Commercial Gazette. The extended circle, arising from his immediate connection with these publications, may be fairly presumed to extend more than ordinary facilities and advantages in the transaction of business as mineral estate and mine agent, in which may be added, the legitimate acquaintance, for the past fifteen years, with the mines and collieries of Great Britain and Ireland, as well as some parts of the continent.

**TO COAL VIEWS AND COLLIERY AGENTS.**—Reported, a party competent to undertake the management of an extensive colliery in South Wales, of a given assurity, or per centage on the sales or quantity raised. The party would be required to advance £20,000, by way of mortgage, to be secured on the property, with interest payable thereon, as may be agreed upon—with the option, within a given time, of increasing such sum as partner—the sum so advanced being applied to the further effective working of the property, on which nearly £50,000 has been already expended. The main object of the proprietors is to obtain the assistance of a practical man, whose interests should be identified with theirs.—Further information may be accepted on application to Mr. H. English.

**VALUABLE CLOUD IN DURHAM.**—Mr. English is empowered to treat for the disposal, by private contract, of a valuable and highly important coal and iron property, situated in the county of Durham, with the option of acquiring all or part thereof contingently. Three seams, varying in thickness from four to seven feet, have been proved in sinking fifty fathoms, on a slope. There is also abundance of ironstone, fire-clay, and building-stone on the property. The sum named for the entire purchase is £100,000, including outlay for buildings, engine gear, &c.—Satisfactory references will be given for the present proprietors, who are to dispose of the estate, and every information afforded on application to Mr. Henry English, at his offices, 5, Shorter's-court, between the hours of Ten and Five.

**SOUTH WALES—ANTHRACITE COAL-FIELD AND IRONSTONE MEASURES, WITH VALUABLE ADJUNCTS.**—Mr. English is authorized to enter into arrangements with parties for working an extensive field of anthracite—ironstone, iron-ore, and building-stone being in the immediate vicinity. The locality presents more than ordinary advantages, while the coal is proved to be of a superior quality, whether for steam or other purposes.—Reports and estimates may be obtained on application to H. English, 5, Shorter's-court, Throgmorton street, between the hours of Ten and Five.

Surveys and reports made of mineral property, as well as plans and sections especially laid down.

\* Plans, catalogues, and reports of mineral property, upon being transmitted to the editor, are duly registered.

5, Shorter's-court, Throgmorton street, Oct. 30.

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The READING ROOM adjoining is provided with all the leading foreign and British newspapers, and general commercial intelligence from all parts of the world; maps, charts, illustrations, structures, steam-boat and railroad information, list of ships sailing in all parts of the world, price-current, documents and books on subjects on commercial subjects.

There are also rooms for PRIVATE BUSINESS, and FIRE-PROOF VAULTS and RAFFERS for the deposit of valuables.

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London, September 1.

The Board of Superintendence of the Hall of Commerce take leave to inform you that in this institution, it has been built and established at a very great cost, by a single individual, for the convenience of the commercial community of the city of London, with a degree of public spirit worthy the metropolis of the world.

The investigation is now placed on moderate a scale as to be no object of consideration, in proportion to the conveniences offered, which are not forthcoming in the whereof proprietors, and the board are of opinion, that, without interfering with any of the existing establishments appropriated to specific branches of trade, these conveniences may be found available by a very large body of persons in the city of London, by frequent visiting London exclusively on mercantile affairs, and by gentlemen from the Continent and other foreign ports.

GEORGE LARPENT, (Chairman.)

JOHN CATTLEY, Deputy Chairman.

H.R.—A coffee-room is now open for the accommodation of the subscribers.

### TO ARCHITECTS, SURVEYORS, BUILDERS, AND OTHERS.

**PATENT METALLIC CEMENT.**—The proprietors of this VALUABLE CEMENT (which is prepared from a metallic sand, similar in quality and chemical composition to the best Badia porcelain, after two years' exposure of the apparatus), can now, with the failst confidence, recommend it to the attention of architects, builders, and the public generally, as being superior to, and cheaper than, any other cement of present use. In colour and texture this cement closely resembles the best Portland stone, it is much improved, both in appearance and durability, by exposure to the weather, requires neither salting nor paint, and excels entirely those from the green belt produced by negotiation. This metallic cement, when used as an external facing for houses and other buildings, or as a base for the action of frost, in impressions to all kinds of brick, or salt water, and, lastly, in addition to the numerous trials made of it in this country, abroad, without having incurred the slightest injury, the superiority of the cement of New York. It is entirely free from those crevices and fissures which disfigure Roman cement, and its adhering qualities are so perfect as to render it almost impossible to separate it from the blocks, slabs, or other materials upon which it has been laid. When used as an internal lining, particularly for walls, stoves, pipes, &c., it will be found to possess great adhesiveness, and can, if required, be fixed to a firm equal to that of marble. The cement's beauty and durability of the adhering substances which have been exercised in this material, exceed the proprie- taries' wildest expectation, the extreme hardness, white, or whitish-green, and the purity with which it can be applied. By comparison of this cement, the proprietors note to the honour of Princeton Hill and Kentish groups, in the London and Birmingham line of railroads, and to the manufacturers of the new Works of Parliament, which have been fitted entirely of metal to receive the metallic cement in view of particular advantages when used with iron castings, as it greatly increases rigidity, and the greater density which it imparts to them, is exhibited in their manufacture. Numerous and material improvements have been made, and constant trials are still in progress at the Works of Princeton Hill, Kentish group, (see advertisement in the Times, and Mr. Charles R. Price, 4, New Broad street, London.)

**IRON TRADE.**—We understand Messrs. Tulk and Lee, of Chester Moor, Cheshire, are building two furnaces to reduce the red hematite ore, under a patented process.

**THE IRON TRADE IN THE CONTINENT.**—(From a Correspondent).—Our letters from Brussels state that the usual expedition is used to take advantage of the transit offered by the German railroads, which are now open to supply that country with iron for some years to come, a first arrangement being concluded on of 30,000,000 kilogrammes, which has been awaiting the partial opening of the railway to anticipate the commencement. The Belgian iron manufacturers are on the alert, and several have come to Brussels to have an interview with M. Naubach or M. Riesberg on the subject. They complain much of the manner in which the duties are levied in France, &c., &c., being charged for one of the first casting, and 14*s.* for the second, which amounts to a complete prohibition; and for manufactured goods the same prohibitory is made—a steam-engine, for instance, of 10-horse power, is generally set down at 10*s.*, or 10*s.*; and they state that if this state of things continues these iron-works must close. The Congress of the Deputies of the Custom Union has been sitting for a month past at Berlin, and which was to have broken up on the 25th ult., but the negotiations have, up to the present time, continued in obscurity. As, however, considerable time must elapse before 100 English vessels could unload this increased quantity at Antwerp, the Belgians are willing to make the most of the opportunity to put back their hands, and thus enable some to resume operations until a better state of things shall arise.

**BRITISH RAILWAY.**—It is considerably rumored that this line will be extended to Finsbury—that is, providing the council and roads will allow the act to a party of London gentlemen, who are desirous of giving the project their support.

**LAURENTIAN AND CANADIAN RAILWAY.**—There appears to be no doubt now that this line will be speedily carried into effect; the shares are all taken up, and deposits from the provisional committee amounted a good sum on Tuesday, at Liverpool, at which the proper articles were drawn up, and will be delivered in due course.

## NOTICES TO CORRESPONDENTS.

The MINING JOURNAL is regularly published about Two o'clock on Saturday afternoon, at the office, No. 26, FLEET-STREET, where it can always be obtained and there is no cause for irregularity in its supply, in fact, other than neglect on the part of the agent through whom it is ordered; but, as respects its transmission to country subscribers, the blame is shared with the Post-office authorities.

**THE SAFETY LAW.**—We have been favoured by Dr. Reid Clancy with one of his latest improved Lampas (a notice of which appeared in our columns a few weeks since), and which we shall have great pleasure in submitting for inspection to any parties who may call at our office, more especially to those connected with coal-mines, and who may thus assist in the prevention of some of those appalling accidents which are so often detailed in our columns.

**THE IRON TRADE.**—We feel indebted to those correspondents who have favoured us with particulars of the different districts with which they are connected; but our returns are not yet sufficiently complete to permit us to perfect a statement as we could wish.

**MEXICO IN PARIS.**—We have received several letters with reference to the note attached to the mining intelligence from this neighborhood, inserted in our last—and we may state, with reference to this, as also to others of similar import, that it was my intention to throw discredit or doubt on the observations of our correspondent, but rather to call attention to the responsibility of having acknowledged as correct information in which the name of the author is not properly attested, should the same hereafter not be verified. We may, however, observe, that in this case [as in all others] the writer is known to us, and we have no reason to place credit in what he has asserted to be true—and of which, indeed, we have received additional confirmation.

"T. W." (Bigr.)—The notice of the dinner given by the Duke of Richmond, on his visit to the Strathmore manganese mine, has lost all claims to novelty, from the time that has elapsed since its occurrence, or we should have had pleasure in recording the interesting particulars furnished us. The event must have proved equally satisfactory and pleasing to the noble donor and his guests.

We have received Messrs. Du Fay and Co.'s Manchester Trade Report for November, which presents the usual valuable systems of statistical information, and which must prove of the greatest importance to parties interested in the cotton trade, &c., on which principally treaty.

**THE HYDRAULIC RAILWAY.**—In an article which appeared in our last week's Journal, under the head of "Railways, British and Foreign, &c.", some observations were made on Mr. Shattock's invention, the source of which it was observed, that two yards of driving pipe per mile would work the system on his improved plan. This improved or simplified method was explained in a letter given to our Journal last spring (March 11), when it was shown, that on this plan about 30 yards of driving pipe per mile would work the system with full effect—that is, in either direction—being, of course, the yards for the five lines rails, which are equal to two parallel miles of way. This was illustrated by a diagram, and, as the writer of the article last week referred to the letter above mentioned, to the purpose which it should point out, that the mistake in the statement in our last, as regards two yards, has arisen evidently either from imperfect recollection or a slip of the pen. Nearly six yards of driving or propulsive pipe per mile (30 yards, to be exact) appears to be requisite before the inventor fully perfected the idea of working by short, steep, sounding inclines, alternating with long, gentle, descending ones. The patentee's very powerful propulsive agent would clearly be called into requisition only to carry the trains up the short ascending inclines.

**ILLUMINATING MAGAZINE.**—The November Part of this beautiful work is more than usually interesting, both from the variety of its literary contributions, and the number and excellence of the illustrations with which they are accompanied. We trust the spirited efforts of Mr. Douglas Jerrold (whom we are right glad to find restored to health) are satisfactorily compensated by general public appreciation—from the excellence of his productions, we believe none deserve it more.

**WEST INDIA MAIL PACKETS.**—We have received a synopsis, in one sheet, with enlarged diagrams, which exhibits, at a view, the present routes, rates of passage, freight, postage, months of post, &c., with times of arrival and departure, of the West India Mail Packet Service. It has been recently printed and published, under the authority of the directors of the company and the Lords of the Admiralty, and will be found highly useful for the shipping house and the library, as also for the information of persons interested in the transit of passengers and goods across the Atlantic to the shores of New Spain and the West India Islands. The distribution of the mails for the 16, 17th, and 24th of each month are clearly distinguished, by columns and well arranged tables for the outward, Windward, Leeward, and Home-ward divisions. The expense of passage and freight is also given for all the inter-colonial, as well as transoceanic voyages, with the cost of refreshments on board, Post-office regulations, for, and forms, upon the whole, an interesting and complete directory to this part of the world—which has, within a few years, been brought, by the vast improvements in navigation, within such easy distance of England, and the rest of Europe.

Bromley, "W. H. P."—"J. J." (Mr. Cutbush).

More extensive premises than those lately occupied being found necessary, the establishment of the Mining Journal is REMOVED TO 26, FLEET-STREET (opposite St. Dunstan's Church).

## THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, NOVEMBER 4, 1843.

\*<sup>•</sup> Parties desirous of ordering the Mining Journal, can do so, either direct to the office, or through any bookseller in town or country. Notices of irregularities in the delivery are requested to be forwarded to the office, where every endeavor will be made to rectify the cause of complaint.

The Ticketing Paper of sales at Swansea, in our present number, demonstrates most fully, and, we may add, alarmingly proves, the advances making by foreign mines, to the destruction of our home industry. The sale this week amounts to 1714 tons, yielding the sum of 31,024*l.* 13*s.* 6*d.*; that advertised for the 8th, 1455 tons, which, at the same average, would give 26,364*l.* 10*s.*; and, on the 23rd, the quantity advertised for sale is 2341 tons, amounting to 46,612*l.* 10*s.*—the three sales, being effected in three weeks, and the quantity announced for sale 3410 tons, which, taken at a like average price, would give an aggregate for the three weeks, or say a month's, sale of 97,937*l.* 13*s.* 6*d.* When it is considered, that the produce of Cornwall is, say 900,000*l.* a year, as exhibited by sales at public ticketing, it must be apparent that this influx of foreign ores is equal to far more than the production of the county, and hence the state of our home mines, and, as the smelters would lead us to suppose, their own depressed position.

We had prepared some notes with reference to the smelters, the "strike," and the state of the copper trade, the insertion of which, for prudential reasons, we deemed it desirable to hold over until matters as between the masters and men had been settled; this having been now accomplished, although we are not accustomed to the course pursued, we shall resume the consideration of the subject, being fully convinced—indeed, the conviction we before entertained being confirmed—that the smelter has the power in his own hands; he can define the price at which ores are sold—he can command the market, as a merchant; if that the importation of foreign ores for home consumption has militated against him, we have only to repeat, he has himself to thank—having been too anxious to reap profits, without regard to the interests of others.

The affairs of the British Iron Company, we are glad to find, are approximating to those beneficial results we have ever anticipated from the success which has attended the project of the formation of a new company, giving, at the same time, the advantage to those original shareholders who may be disposed to invest further capital.

The capital of the company, it will be remembered, was 3,000,000*l.*, or 30,000 shares of 100*l.* each; on these shares 20*l.* has been called—thus raising a sum of 3,000,000*l.*. Certain monies or claims on the present company now exist, and, with the view of paying off such amount, as well as obtaining sufficient funds as a floating capital—the plant being secured by the arrangement existing, which may now be said to be carried out—a new company has been formed, with a capital of 400,000*l.*, in 20,000 shares of 20*l.* each, the principal committee being formed of parties of the highest character, whether as connected with the mechanical or moneyed interest, some of whom are, we are glad to find, practically conversant with the iron trade.

The amount to be paid for the purchase of the works is 300,000*l.*, the remainder being available for the prosecution of the undertaking, the works being capable of producing 45,000 tons per annum. It appears from a notice in our columns of to-day, that a sufficient number of registered shares have been subscribed for by the proprietors of the old company, and that the "New British Iron Company" may now be considered to be formed. We trust, however, that those interested in the advertisement.

The improving state of the iron trade has, doubtless, given the confidence a "lift" in its projected increase of capital, wherewithal to proceed—the arrangement made with the body of proprietors being at the moment when the price of iron was most depressed. We trust, however, we have seen the worst; and, with works of the magnitude such as the British Iron Company possess, with practical expe-

rience, and the command of capital, we can readily imagine that it will not only maintain its position, but, with the advance in price, yield to the shareholders a return, which will fully justify the course now pursued.

We are glad to find, from the several communications we have received, that the subject of Accidents in Collieries is likely to attract public attention, and that our efforts will, in the end, be crowned with success. We have, during the past week, received from more than one member of the Court of Aldermen the assurance of support on the measure being brought forward in the Court of Common Council, who, it is presumed, will present their report to the Court of Aldermen, with the view of the recommendation of the Court being carried out—no question existing as to the vote at which it will arrive.

We are collating all the information in our power, and court the assistance of those connected with collieries, more especially in the north, to forward us information, which will enable us to render the memorial to the Queen complete—at least, so far as describes the fearful accidents which have arisen.

It is with sincere pleasure we state, that, since our notice, we have also received the promise of several members of the Legislature that they will support any measure which may be introduced for the protection of the working collier; and we have every reason to believe that her Majesty's ATTORNEY-GENERAL will lend his aid in the introduction of a bill in the House of Commons. Under such circumstances, and with such prospects, we have only again to express our hopes, that those interested and possessing the means will render assistance in the good work. We court information, which shall be acknowledged, and, where available, promptly acted upon.

We are sorry to learn that the royalties announced for sale in the county of Cork have been withdrawn, or rather, we should say, the sale has been postponed until January, in the absence of any offers. This is to us a source of regret, as we were induced to hope, even if English capital was not forthcoming, at least that Ireland possessed sufficient enterprise (to secure a mineral property of such extent as that presented—in the expectation that the time is not far distant when the Sister Isle (which is acknowledged to abound in mineral wealth) would be a rival in the market with our more fortunate foreign competitors.

We observe that the Bearhaven Mine sold ores to the amount of 2486*l.* 15*s.* this week, the produce being 10*l.* to 10*l*; and a small parcel from Ballymurtagh obtained higher prices than we have been in the habit of seeing. We trust this is attributable to an improvement in the lode, as, in such case, we may look to the county of Wicklow, with its large extent of mining ground, as likely to add to our mineral produce—attention having, for the past two or three years, been more particularly directed to the sulphur ores, with which the lodes abound.

We last week offered some remarks on the amalgamation of competing lines of railway, or such as may be considered to form an integral part of a whole—as, for instance, the London and Greenwich line with those of the Croydon, the Brighton, and the South-Eastern Railways. Every one, we believe, whether interested or otherwise—if we may except the disputants, whose conceit far exceeds their wisdom—arrived at the conclusion that unity of action was necessary for the interests of the proprietors of the respective lines, as well as being advantageous to the public; but obstinacy in some instances, and love of power in others, have had the effect of subjecting the several lines to an outlaw by no means warranted, excepting in support of the several peculiar views entertained by the directors. It is with pleasure we learn, from a source on which we can place full reliance, that the southern lines—that is, the Croydon, Brighton, and Dover—have had meetings and consultations, with the object of effecting arrangements with the London and Greenwich line, by a poll tax being paid on the number of passengers carried, according to the respective classes of carriage—thus, as we conceive, placing the matter fairly—that is, assuming the terms proposed per head shall be so considered by the parties, and giving to the proprietors of the London and Greenwich line a rental or return according to the extent of which the other lines may avail themselves. A difference of opinion may—and, doubtless, will—arise, whether it would not be better to have accepted a certain annual rental for the use of the line; but, with the conflicting opinions which are entertained as to the contemplated traffic, we cannot but consider the proposed arrangement the most desirable. We hope next week to be in a position to state particulars.

## PRESENT STATE OF THE IRON TRADE IN SCOTLAND.

(FROM A CORRESPONDENT.)

From the annexed return of the state of the weekly make of pig-iron in Scotland, it will be observed that—although there are nine furnaces less in blast now than in September last—the make is only reduced by 270 tons. This may be accounted for, from the make of some of the works having been put down in September below their average, and from the make at those works which have blown out furnaces not being proportionately reduced—for the extra power of blast enables them to produce more iron per furnace. The produce of three furnaces at each of the works of Dunder- ton, Govan, and Monkland, is used in the manufacture of bar-iron at the Clyde Iron Works, and the produce of one furnace at Muirkirk is also so applied.

## MINUTE ON THE EXTENT OF COAL-FIELD IN NORTHUMBERLAND AND DURHAM.

The base line assumed, in the estimate laid before the House of Lords, by Mr. Hugh Taylor, in 1829, was as follows:—"From the mouth of the Coquet, in Northumberland, to Castle Eden, in Durham, a distance of forty-eight miles." The view then taken has been remarkably verified, by pits being sunk close to the Coquet on the north, and workings are now in progress, which prove that the coal-field extends, at least, two miles to the south of Castle Eden, beyond which, southwards, no explorations have been made; but, from the depth and inclination of the coal beds, there is every reason to conclude that they continue much further in this direction. The estimate referred to gave a thickness of twelve feet of coal or eight feet of available mine; but, according to Mr. Buddle's synopsis, the average thickness throughout the coal-field is twenty-four feet. This increased actual thickness shows that the estimated duration of 1727 years was formed, as intended, upon a most moderate calculation, and with the additional coal-field since ascertained, fully warrants the estimate standing in its present state, even though the consumption has increased from 3,500,000 tons to 6,000,000 tons; a portion of this increase, however (342,438 tons) consists of small coals exported foreign, which were formerly wasted. The following are the respective depths at which the coal has been sunk to along the east coast:—

	NORTHUMBERLAND.	DURHAM.	
Coquet	80 fms.	South Shields	200 fms.
Cowper	100 ..	Moor Workmouth	265 ..
Hartley	80 ..	Merton Whin	229 ..

The foregoing indicates an inclination of the coal-measures to the south-east, which is the general dip of the strata in this district; and, as the depth of the sea, within twenty miles of the coast, does not exceed forty-five fathoms, or, indeed, in any part across, is not more than sixty-five fathoms, there is every reason to believe that the formation extends considerably beneath the German Ocean. Taking the same eastern base line, as before explained—namely, fifty miles in length, it would require an extension of little more than 14½ miles into the sea to obtain an area equal to the unexcavated tract of coal in the estimate—namely, 732 miles, and which, in the advanced state of mining science, engineering, and machinery, will, doubtless, be wrought when circumstances require.

J. BUDDLE. H. TAYLOR. G. JOHNSON.

The correspondent to whom we are indebted for the foregoing particulars has also favoured us with a plan of the coal-fields of Northumberland and Durham, for which we beg to tender him our best thanks.]

## AMERICAN MINING STATISTICS—LEAD TRADE.

[We quote the following particulars from the "Notes of a Man of Business," dated New Harmony, Indiana, Oct. 1, published in the last Number of the *Liverpool Times*.]

Pig-lead raised and smelted in Galena can be sold in the Liverpool market at any period of the year with a good profit to all parties, all expense paid, at less than £5 per ton. In the winter, pig-lead may be bought in Galena at £1 dollar 75 cents; shipped in the spring to New Orleans for 20 cents; and sent from thence to Liverpool, as ballast, free. In this case, it might be delivered in Liverpool, insurance and duty paid, at £1.12. per ton. This is manufactured without the aid of other machinery than the pick, the shovel, and common hand windlass, and smelting-furnaces of a very inferior description.

The mining district of Illinois, Wisconsin, and Iowa, alone surveyed by David Dale Owen, is larger than all England and Wales together, containing seams, beds, and veins of coal, iron, lead, copper, limestone, common fire and porcelain clay, sand, zinc, and other minerals inexhaustible. The mining district of Missouri is probably more extensive, and is known to have been partially worked by the Indians and Spaniards for 300 years. There are large quantities of iron and coal in Ohio. In Tennessee and Kentucky, charcoal iron can be made cheaper than in other countries; it can be made with coal. Wood fuel can be had for 62½ cents per cord, 4 ft. by 4 ft. by 8 ft., ready for use, and is delivered at the furnace mouth for 1s. per ton. There are immense beds of iron ore in these two states. In Pennsylvania, the iron and coal are even more plentiful than in Wisconsin, &c. The nominal wages of workmen in the mines, and at the smelt-works and iron-works, are very little higher than they are in England, but the workmen obtain at least three times more of all the necessities of life for their money than they do in England. The credit system is nearly abandoned in the states, and a great deal of the business done is by barter. Clothing, ironmongery, groceries, &c., have been reduced in price almost as much as food, and American manufactured goods, as well as British, are sold in the shops, for cash, nearly as cheap as in England; and, as the Americans are making the greatest efforts in the west, as well as in the east, to increase their own manufactures, it is folly to expect that England can long compete with America in her own territories. The democrats have elected a large majority of the Members of Congress, whose creed is free trade, and no duties but what are necessary for revenue; but I hear so many different opinions on this subject, that it is difficult to form an opinion as to what may be the result. The manufacturers, and iron and lead makers, will fight hard for the present tariff, with, I believe, few exceptions. My impressions, from all that I have seen, are, that American can present successfully compete with us in some mineral and many manufactured articles, and that, in a few years, it will be in their power to drive us from most of the markets of the world—our only chance of meeting them is by easing our burdens, and carrying out immediately the principles of free trade.

ELECTRO-GALVANIC BLASTING.—We last week gave a description of a new application of the conducting power of water, by Lieut. G. R. Hutchinson, R.E., which we now find General Pasley, after trying a number of experiments, has become satisfied in a novel and ingenious mode of firing submarine charges—viz., by a single conducting wire, making the sea complete the voltaic circuit, instead of a second wire—and it, upon the whole, much more convenient, though by no means more efficient, than his former method; and that he has, therefore, ordered all the double conducting voltaic apparatus before used at Spitalfield to be altered to single ones on this new principle, which, however, is not suitable for underwater explosions, because earth is a much weaker conductor of electricity than water. A person of the experiments tried by Mr. Bain last year in Hyde Park first led Lord Hutchinson to this improvement—but that both earth and water are conductors of common electricity at very great distances had been practically proved by Dr. Watson nearly a century ago, as will be seen by referring to the *Transactions of the Royal Society* for 1748; and water was afterwards proved to be a conductor of voltage electricity, by Alford and others, about forty years ago. We mention this, not out of disengagement to Mr. Bain, whose mode of proceeding, by using plates in addition to wires, is a great improvement upon that of former experimenters, but because a dispute as to the priority of other important inventions depending upon electro-magnetism has taken place between him and a recently celebrated professor, upon the merits of which we have no wish to offer an opinion.

REMARKABLE CAVE.—A correspondent says:—"We visited a wonderful cavern under Langthorpe, which has been explored for a thousand yards, but we exhausted ourselves by going only two-thirds of the way, or 200 yards. The roof and sides are covered with stalactites, some of which are transparent, and produce musical sounds, of great variety, from that of a peal of bells, musical glasses, China gong, to the Indian harp, and they assume every feature from you can imagine, from a yard long to the appearance of tentacles, bats, figures of men and animals, with beautiful drapery and fine network. The roof is incrusted with crystals in every order of architecture; Post's-holes or Cicatrices caves will bear no comparison with it. A geologist told our guide that he had seen all the fossil caverns in the world, and these were only one superior to it.—See Cliff, Derby Date."—*Liverpool Times*.

ENORMOUSLY REINFORCED CANTILEVER ACTION ON ROCK-SALT.—A recent discovery has recently been made as to the cause of the subsidence of the rock salt received from the Penrhyn, supposed to be occasioned by evaporation. This turns out to be in reality caused by the evaporation of brine solution, which, though thin in a pretty pickle, have all at one time been alive. The red matter seems to be silicon, and is not noted types by silica or metallic salts. This fact has, for some time, been familiar to geologists in reference to much of the rock salt found in various parts of Europe—it was supposed and now is verified in that of the British colony.—*Brecon Times*.

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UNUSUAL RAILROAD.—A poor conductor of steam, of the name of Boulton, has invented a pony and fly-engine, which, for completeness and power, is unique. It drives water at twenty-two feet from the surface, and there is a great distance. Its cost is about £200, and it possesses the hydraulic power equal to a large engine worth £700, or £800. An experiment was made in the presence of a committee of men, and goes generally well.—*London Times*.

## ORIGINAL CORRESPONDENCE.

## UNITED MEXICAN MINING ASSOCIATION.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—At the period of the annual general meeting of this concern approaches, the proprietors naturally are anxious for the fulfillment of the chairman's expectation of the payment of the balance still due upon the red scrip shares. Mr. Moore may rest assured that he has the sincerest thanks of the great body of shareholders, for having expressed his sentiments so strongly upon the subject at the July meeting, and the directors cannot perform any act that would be more acceptable than an early compliance with his wishes. The despatches from the mines since Midsummer have advised some heavy remittances, and the cash balance in the hands of the board must have considerably increased, notwithstanding the monthly drain of £1000, for shipments of quicksilver; and I should, therefore, hope, that the directors are now in a situation to declare and advertise a dividend of the remaining 12 per cent. still due upon the red scrip certificates. Should there, however, still be a deficiency of the regular funds for the purpose, I would take leave, most respectfully, to suggest to the directors, in order to effect so desirable an object, to lay hold of the unclaimed dividends. It appears by the report in July, that, upon the auxiliary loan and the red scrip shares, there then remained upwards of £6000, unpaid, although upon the former more than two years, and upon the latter six months, had elapsed, since the last advertisements of dividend had been duly published. The probability is, that no demand will ever be made upon the company for this reserved fund; but, to put the matter beyond the possibility of dispute, it might be prudent to invite all persons duly entitled to send in their documents, within, say one month from the date of such advertisement, upon pain of payment being otherwise deferred until further remittances arrive from the produce of the mines. I submit, that no injustice whatever would thus be done to the parties, and, as I do not anticipate any considerable claims, the effect of the plan would be, to place such a sum of money at the command of the directory as would enable them, in the month of December, to get entirely rid of the actually existing and vital remainder of the debt, and set the concern free for the general distribution of ensuing profits amongst the proprietary at large. AN OLD MEXICAN.

Oct. 30.

## MR. S. B. ROGERS'S DATA FOR BLAST-FURNACE MANAGERS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I greatly regret the non-acquiescence of Mr. Rogers in my request of the 2nd ult. I have read his valuable treatise on blast-furnace management more than once, and with close attention, and should have been glad to have been favoured with his views of the hot-air application, in reference to the tenderness of the iron commonly produced from it. I deplore, in common with many others of your readers, I am sure, the worse than ridiculous controversies which have so frequently appeared in your Journal, arising very often, no doubt, from the indulgence of a disposition for display, or an inclination to cavil—wasting your valuable pages, and gratifying no one but themselves. I cannot suppose that Mr. Rogers could hazard an enunciator of such a nature, for his exposition being merely circumlocutory, and of a purely scientific character—not entering at all into any party question of comparative value—would not be likely to provoke a controversial attack. Your correspondent's contributions are estimated too highly to be in danger of such treatment, or of being lightly carp'd at. There are opinions held—and by sensible persons, too—not agreeing with some of those promulgated in the "Data;" I can adduce one instance, in which a very talented individual (the late Mr. David Musket, with whom I was acquainted) entertained a very different view from Mr. Rogers on the force of blast delivered into furnaces.

Mr. Musket, in his *Papers on Iron and Steel* (published posthumously, if I mistake not, by his son), by a course of very conclusive reasoning, advocates a strong pillar of blast, especially for coal similar to that of the South Wales district. This will be found at page 322 of the work, and is well worth referring to by any interested person among your readers who may not have read it. It will be needless to remark, that Mr. Rogers has expressed himself favourable to a soft pillar of blast—or, rather, to a much lower one than is ordinarily used. I name this, certainly not with any intention of finding fault with Mr. Rogers, or to provoke a reply from him, but to show one instance of a contrast of opinion in regard to his views—and I know of others—and yet no one has ventured to call in question the correctness, in any part, of his "Data." On the point referred to, my experience leads me to the belief, that a strong pillar of blast is generally the most beneficial, although there are cases in which Mr. Rogers's argument holds good. I estimate very highly Mr. Rogers's labours in the present instance, and hold in too high respect the clearness of his views, and the usefulness of his work, to disturb a moment the favourable reception it has met with; and this feeling, if I mistake not, is entertained by all his readers.

Mr. Rogers will, I trust, permit me, in reply to his remark, to observe, that it does not appear to me that a "remedy for bad or supine iron" is the question—but, rather, what is the cause of tenderness in hot-blast pig-iron, a defect well known to exist in iron of the purest quality as produced? This is the point to which I wished to draw that gentleman's attention; and I flatter myself he will think again about it, and that the result may be a compliance with my request. It will be evident to you, Mr. Editor, how injurious, in every point of view, some of those controversial articles which have appeared in your Journal are; for here, you see, is an instance of one of your estimable correspondents being backward in expressing his views on a subject of importance, from an apprehension of being forced into a position of controversy. It is due, however, to yourself to say, that you have taken great pains to free your publication from these annoyances; and, such has been your consistency and frankness, that you appear to have succeeded. Your columns are too valuable to be occupied by useless disputes—and their interest, which is continually increasing, cannot fail to be appreciated, and your labours rewarded.

A SUBSCRIBER TO YOUR JOURNAL FROM ITS FIRST APPEARANCE.

Newcastle-on-Tyne, Nov. 1.

[We readily add our testimony to the interest which Mr. S. B. Rogers's valuable "Data for Blast-Furnace Managers" creates; and also our subscription to him, for explanation on the subject alluded to by our subscriber, as such cannot fail proving of great value—and, we are sure, would be highly appreciated to provoke a controversial attack.]

## TEMPERATURE OF MINES—VENTILATION.

SIR,—In your report of the speeches at the late Cornwall Polytechnic meeting, John Taylor, Esq., of the United Mines, is said to have observed, that "the temperature at the United Mines had increased very much lately, and somewhat alarmingly so," because its effects had been felt in the health of the men. They had had this summer more young men dismissed from the effect of working in a heated atmosphere of a great depth than they had ever had before, and one of their agents was directed last week to observe accurately the temperature in the deep parts of the mine. In the over-cut north, at the 100 fathom level, the temperature of the air was 100°F., while that of the water issuing from the rocks, where the men might be said to be working in a perpetual shower-bath, in which the streams were much more copious than they were in the habit of enjoying in their own rooms, the temperature of that water was 50°. In another part of the mine, which was rather deeper, the temperature of the water was 57 only—which was rather a curious fact—and the temperature of the air was proportionately less also. This temperature was higher considerably than in the bottom levels of the Treasures Mine, and somewhat higher than in the bottom of the Concourse, although very much deeper than the United Mines were; and, finding the great sufferings of those men from the heat, it became a consideration that the adoption of some means of relieving them could not be long postponed. The ventilation was perfectly good, the stream of air was abundant, the candles burned well—it was only the extreme temperature, and the great height which the men had to climb, which were felt as increasing evils.

With all due deference to Mr. Taylor, the fact of candles burning well is, perhaps, not a positive proof that the men is perfectly ventilated, as it well known that even iron will burn in oxygen gas! The concern, however, holds, that if good candles will not burn, when lighted, the air is too impure for healthy respiration, which, to the humor of human nature, Mr. Taylor, as an employer, is destined the men should have, although there are quite appropriate proofs for the peace of those who do not, like rotten sheep. Though "the stream of air is abundant," the high temperature of that air is a proof, unless the ground is very hot, that the circulation to and from the outer atmosphere is not great. By a meteorological table, constructed from observations made at Falmouth in the year 1841, it appears, that the highest temperature at the surface was 72°, and lowest 52°; the average maximum being 62°, and the average minimum 52°; the mean difference between day and night being 10°, the highest difference in July 12°. Now, Sir, comparing 52°, 62°, 52°, 42°, or even 52°, with 100°, there is a vast difference of change of temperature. Mr. Taylor, it is true, speaks of the "summer months"—so to 72°. But the temperature of the water is high—this water is not all water. But, again, the heat escapes into the heated air. It would, perhaps, not be advised to draw out the heated air, and as much of it as possible by night, so as to have the benefit of 52° in summer. How is this to be done?—by an air-shaft, with a large vertical opening or chimney on one side, and a wheel, 16, 20, 24, or 28 feet diameter, as shown in my model at the last Polytechnic meeting, where I was presented from competing for the Prize premium by an anonymous competitor as to prior publication of details (see *Times*), and a little special pleading, which I hope to get over, as to Charles Lonsdale (the president) and the judges have mentioned every disposition to do me justice. Although it would seem that "there is nothing new under the sun," I might go on to show that there is nothing like my plan either to have shafts, or to the north bottom, or to the water under the sea, but this would not be practical, prior to the judge's report, and, therefore, although I am very much inclined to this project to improve the state of my industry as an efficient remedial for mines, I submit,

Yarmouth, Oct. 30.

ALFRED E. J. MARTIN.

## GEOLOGICAL NOTICE OF THE SOUTH WALES COAL-FIELD.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In the last *Mining Journal*, you have inserted a paper on the geological characters of the boundary of the South Wales coal-field, being the substance of a lecture delivered at the Mechanic's Institute, Cardiff, by Mr. A. O. Davies. I have read with very great pleasure; and, if he would follow up the survey, and describe distinctly where we are to find the crop of each different vein of coal and mine round the whole extent of the basin, he would do a great service to this district—a service he appears to be quite capable of performing. But there is one vein of coal workable, on the east end of the basin, which he has left out, and I have no doubt of its extending through the whole length and breadth of the coal-field, which I shall describe below.

Mr. Davies says, the lowest workable vein of coal in Risca is called the sun vein, at Pontypool the stone vein, at Nantyglo the four feet vein, at Cyfarthfa the Gelli-glynn vein—and, he may have added, at Blaenavon, Talybont, Glynneath; Abercynon and Pontypridd, the old coal vein—the whole, under different names, is one and the same vein of coal. Under that vein of coal—some places ten, some places twelve, and others thirteen or fourteen yards—lie the courses of limestone, known as the bottom vein mines, and next under those vein lies the rock that Mr. Davies calls the Farewell—that is to say, "Farewell, coal and mine." At this work there has been worked a vein of coal more than forty years past, 2 ft. 2 in. in thickness, under the rock. Mr. Davies calls the Farewell Rock—the rock that lies upon it being sometimes eight, ten, twelve, and I have seen it in one place eighteen yards thick, from the 2 ft. 2 in. vein of coal up to the bottom vein mine. Mr. D. has described that rock as to character, &c., very well, but you will perceive he has given it a wrong name, because it cannot be called "Farewell, coal and mine," when there are other veins of coal and mine under it. I once sank an engine-pit (which pit is at work now) forty-five yards below the bottom vein mine, and I will give you a section of the measures from the bottom vein mine downwards.

Yds. Ft. In.  
Strong couch and mine ground to big vein mine—a coarse mine . . . . 3 0 0  
Rock upon the 2 ft. 2 in. vein of coal, called by Mr. Davies Farewell . . . . 6 0 0  
Vein of coal . . . . 6 0 0  
Limestone under the coal, a rock, having strong couch partings . . . . 10 0 0  
Vein of coal . . . . 6 0 0  
Rock, mixed with strong couch . . . . 6 0 0  
Strong couch, partly fine-grained . . . . 6 0 0  
Kind working mine ground, with balls of excellent mine sprinkled through it, but not far apart to work . . . . 14 0 0

Total depth of the sections below the bottom vein mine . . . . 44 2 11

At the bottom of the fourteen yards of mine ground we were upon a very strong rock, nearly forty-five yards under the bottom vein mine—that is the rock, I think, which should be called the Farewell Rock. The rock at the bottom of the engine-pit is a millstone grit, and lies upon the upper strata of limestone; the thickness of it here is from thirty-nine to forty yards, making the whole distance from the 2 ft. 2 in. vein to the limestone about seventy-two or seventy-three yards. There is a tunnel here, 2000 yards in length, driven through the mountain, for the convenient transit of limestone from the back of the mountain to the works; 1500 yards of the tunnel is driven in the 2 ft. 2 in. vein of coal, and, consequently, under the rock Mr. Davies calls Farewell. The 2 ft. 2 in. vein of coal being under all other workable veins, and having such a strong rock upon it, it frequently extends a great distance farther than does the bottom vein mine. Blaenavon furnaces are situated at the extreme crop of the bottom vein mine, but the 2 ft. 2 in. vein of coal, as it covers more than a mile from the works in a north-east direction, cuts out beyond the ridge of the Galles, on the Blaenavon mountain.

Mr. Davies observes, that twice the quantity of ground must be shifted on the north side of the basin than on the east, to get the same quantity of mine. I think not. I think there is as much mine in the cubic yard of working ground on the north side as the east—what I intend to say is, there is as much mine in the quantity of ground turned over, to get at the mine at Blaina, as there is at Blaenavon, or Twys Hartwim; the difference in the thickness of the whole strata from top to bottom of the minerals neither adds to nor diminishes the quantity of mine in the working ground; the veins are as long together in the regular working mine ground in one place as the other.

The opposition of there being such a striking difference in the whole thickness of the mineral strata at Blaina and Twys Hartwim must have arisen from the great difference of inclination of the strata at the two places—at Blaina, the inclination, perhaps, does not exceed three and half inches in the yard; at Twys Hartwim, it inclines, perhaps, twenty inches in a yard. That very sudden cropping out of the lower veins would decisive; for the upper veins lying back on the slope of the mountain—so much so, that they crop more over the bottom of the basin, and lie more level than do the lower veins of their crop, far below on the side of the mountain—would make it appear, without great care, that the whole mineral strata, from top to bottom, is thinner than it should be.

THOMAS DRAMIN.

## THAMES EMBANKMENTS.

TO THE EDITOR OF THE MINING JOURNAL.

**Sir.**—It must be a subject of universal satisfaction to the citizens of this great metropolis to hear there is a likelihood that those great improvements are about to be taken up seriously in the proper quarters, and acted upon, as alluded to in your pages last week, agreeable to the suggested plan of the Hon. Colenso French—of having our great Babylonian city graced by spacious quays and promenades from Westminster to London Bridge, which would fail to relieve us of that constant nuisance, by stoppages, which is of daily occurrence in travelling westward from the City to Canning-cross, by vehicles of every possible description passing to and fro by our accumulating traffic, at once rendering some new outlet indispensably necessary, even if the alterations had nothing else to recommend them ; but, Sir, when it is taken into consideration that by unhooking old Father Thames into narrow bounds we might probably get rid of those swarms of corruption and putrid matter which form themselves along the shore, more particularly between Westminster and Blackfriars, quite sufficient to generate disease of all sorts. I cannot help hailing this consideration as paramount in importance to any other, and which seems to be entirely overlooked by your correspondent ; would not this, therefore, be an additional and stronger reason for the projected scheme which would free, I have no doubt, the metropolis of those periodical epidemics and disorders which the bills of mortality so frequently exhibit, by the sudden change of the season, and the atmosphere walking infection on the brain. I shall be happy if this subject shall meet the eye of some of our able physicians, or the Board of Health, and have their remarks on a subject which must be interesting to all classes, and indifferent to none ; while the undertaking—itself of great public utility, would give birth to so many unemployed hands at the worst season of the year.

Greenwich, Nov. 1.

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VICTORIA WORKS—MESSRS. THORNEYCROFT'S BANKRUPTCY  
IN THE COURTS OF THE MEXICO CITY.

On the 20th of the MISSING JOURNAL,  
See.—On presenting the evidence of the "Missing Journal," of the 20th inst., I would like to add with a paragraph relating to Messrs. E. B. & G. Thorncroft, Jones & Co., of Victoria Iron Works, in which it is stated that "all the creatures, both in the past and present existence, expressed themselves perfectly satisfied with the manner in which the emperors had been kept, and the examination passed without the slightest censure." Now, notwithstanding the extreme aversion I entertain respecting the ascertaining of any individual in a public journal, yet, where most or all of the details of truth, and doubtless of discreditable, appear to be responsible paper or papers, and which paper has hitherto been the medium of exposing every species of fraud, deceit, and recklessness—transferring and carrying weight and consequence over the "angle and breadth of the land"—I feel that I should not be doing duty either to my employer, myself, or a very large party of most respectable individuals, were I not at once to contradict an immediately anterior assertion. I should have pursued, however, by stating my perfect conviction, that you would never have allowed such a statement to have appeared without a thorough investigation. Your exposition of so many ridiculous transactions, and your desire at all times to be made acquainted with every circumstance of a dishonesty perfectly proves this fact. The question, then, simply reduces itself in this, "Who was your informant?"

1. It could not have been the *court*; for the *court*, at the request of the collector on behalf of the creditors, gave the *adjudication* permission, at the end of the satiation, to employ an *adversary*, in order to endeavour to make out an account of the quantity of pigs then purchased and received upon the premises, an account of the quantity of hams then manufactured, and what became of them, which statement had hitherto been produced, caused great dissatisfaction to the creditors, and induced them, through the collector, to apply for it, and for which purpose a most responsible *adversary* Mr. J. Clarke, *Boschet's* tail, Birmingham, has been employed, and is in the hands of Mr. Peasey, who was engaged by the *bankrupt*—this tendency being more fully to confirm the dissatisfaction of the creditors with those accounts already delivered, and the want of confidence placed in them.

2. It could not have been either of the *adjudicants*—both of these (*myself* being one) having perfectly acquitted with the *bankrupt* agent produced.

being perfectly satisfied with the balance sheet produced.

" It could not have been the condition generally, for very many of them presented to me their charges and disbursements; probably, a few of them may have been satisfied, and may have had their reasons for being so, but, individually, I know of no one, who should like exceedingly to be made responsible with the "shadow of a doubt."

" I would, therefore, present it to you as being even artful " ready reckoning" instead of the books-keeping, verifying the Latin saying, that— "Abimurque se ostendit, ne optime absens estiam." And I cannot but think this practice—wherever it may be, be giving me an opportunity of publishing in your columns, what it is my intention, in the form of a pamphlet, herself to publish—viz., a statement of the cause of the bankruptcy, Messrs. E. B. and G. Thosmeycroft, Jrs., of which I do not doubt, and proper the whole measure should be made compensated. Considering at the time they took possession of the Victoria from us, with a majority of the valuation of stock taken by them from their assets, Mr. G. B. Thosmeycroft—~~the~~—the author of the loss, and the money stated to have been laid out upon the premises—the author, Mr. G. B. Thosmeycroft, giving a guarantee for the rest—and the assets, Mr. G. B. Thosmeycroft, putting in an execution for the same, and on the points indicated upon being sold by private contract, in a series of the bank-bills of the bankrupts by the bankrupts of nearly every thing that could be taken from the premises—of those carrying on the concern when they knew that was incurred, for the space of several months, and obtaining credit under improved pretences—that it was not by bad debts nor losses that they became bankrupt, but by wantonness and complete indifference to business.

And, lastly, the public shall be furnished with a copy of their balance sheet, which informant has stated as having given on verbal extraction, but which, in my humble judgment, will receive no stated publicity at a meeting of the creditors of Westminster Bank, on July 1st, 1901, under the name of *The Secretary of the Committee of Creditors*, in every congressional town of Great Britain.

I am, Sir, your obedient servant,  
D. A. M'Dowell, Lieut. H. P. Kite Brigade,  
Land and Mineral Agent to S. E. Nathalia, Esq.  
Charlotte-Lake, near Newcastle-under-Lyme, Feb. 20.

P.S.—The debt due to the Bankrupt by Mr. Nathalia is upwards of £1000. At the time I commenced supplying them with pig iron, which was in January, they had not been personally aware of their insolvency, so that every bill I received from them has been returned. I am enabled to name, that the trustees of the wife and son of the bankrupt, Mr. G. Elmsleycroft, disposed of the whole of the horse and furniture, &c., under a deed of settlement, the validity of which the trustee in the creditors has received instructions to try, and a copy of writing shall here-

**German Iron Taxes.**—It appears that no increase of the duty on iron imported into the Federal states of Germany is to take place for the present. In reference to this subject it may be remarked, that a report has lately been spread in Germany, by interested parties, that the British Government had resolved to meet any such increase by a corresponding bounty or exemption; the propagators of the report grounded upon it the necessity of imposing an import duty so high as to render the corresponding bounty impossible. There is reason to believe that the daily growing influence of the railway proprietors, who have already laid out a capital of 6,000,000,000, or 8,000,000,000, sterling, and are about to expend at least 10,000,000,000, more, has had its effect in preventing the increase of duty.

**IMPROVEMENTS IN METALLIC DEPOSITION BY GALVANISATION.**—At the monthly meeting of the Liverpool Polytechnic Society, held at the Royal Institution, the paper for the evening was one by Mr. Spenser, on some new electro-metallurgical processes, which add to the wonderful results already produced by this interesting science, and will probably lead to great improvements in the art of working in metals by this valuable agency. After an able introductory address, in which Mr. S. called attention to the improvements in this science from the commencement, he explained some experiments in which he had been deeply engaged, and which were likely to prove of much importance. These first described an arrangement, consisting of a piece of uncoated copper placed between two walls of moist clay; this combination separated two rods from each other, the poles of a galvanic battery being led into each of them; after this current had been kept in action some weeks, it was found that one end of the piece of copper was continuously dissolving, while the other was fully made up by increase of the other—the copper itself having no direct communication with the battery, being only in the line of the circuit. From this newly-discovered action, he derived how induced electricity played an important part in the transmutation of metals as metal vapour does not act on another, whatever is given is the distance of the separation of the objects. He had already applied the principle to the manufacture of photographic plates, which have two battery in a most conveniently partitioned state, for applying to anything that can be accommodated in the usual way; and, from his observation, prints, and equal images, are the better fixed for the purpose than those partitioned by mechanical means, and the arrangement is of much simpler action to dispense with the usually complicated array of binding wires and pins, in padding to the substratum, and by which any further action is precluded. Some curious modifications of this principle were also shown, by a sensitive body core being revolving in a fluid of one length of time, and its action regulated like a clock, and the results of similar experiments were most extraordinary. A narrow and long platinum wire through which divided into four cells by three porous vermiculite partitions, one and a half inches apart, had each end as anode or the pole of a bell battery; the pole of a galvanic battery was placed at each end, the positive being above, and the negative beneath. In the first experiment each the silver pole was placed a piece of gold, in the next a piece of silver, and to the third a piece of zinc; the trough was one fifth full of common salt solution, made with sugar, to prevent evaporation, and the volatile vapour admitted to go over the surface, the results being varied at intervals. After a history of singular experiments, the gold had at length taken up the place formerly occupied by the silver; the latter metal had displaced the zinc, and the zinc was now deposited on the platinum, or negative pole; these extraordinary results will, no doubt, find in further experiments. Mr. Spenser next explained how may be, in this work of art, may be diminished by the electrolytic process, copper may be deposited either in a brittle state or otherwise; the former may then be annealed, and, subsequently, dissolved in heat; a brittle state being obtained, and afterwards heated or dissolved in a spirit lamp, the former converted, each by increased action of the process. The most curious, yet simplest, page of a longer work need be retained. The human eye, by the power of imagination, can easily understand the bold experiments

## THE PRECIOUS METALS OF MEXICO

A committee of the French Institute, consisting of MM. Berthier, Dumaine de Bonmont, Bousquault, and Berquerel, have reported on a work written by M. St. Clair Duport, entitled *De la Production des Métaux Précieux au Mexique*, in which they state that Baron Humboldt, in his political essay on New Spain, has given a report of the mines in Mexico, their production in precious metals, the average per centage of the ores, the annual consumption of mercury for amalgamation—in short, the quantity of precious metals exported from New Spain since the conquest until 1803, the epoch of his return to Europe. The war of independence, the political changes, and other consequences dependent on that, having caused great modifications in the production of the mines generally, it became necessary to resume the subject where Baron Humboldt left it. This M. Duport has done in a very elaborate work, which was referred to the present committee. M. Duport having resided the last sixteen years in Mexico, having relations with the principal mining companies, and being concerned in the refining of the Mexican coin, was in the most favourable condition, not only to study, but also to introduce improvements in the metallurgy of silver. To obtain these ends, he has visited at different times the principal metalliferous deposits from Taxco to Guadalupe y Calvo, in the states of Sonora, and Chihuahua, a distance of more than 6000 kilometres. The observations he has collected on geology,

the court of Madrid, has exercised on the production of silver in Mexico. In 1766 it fell to 45 piastres 36 reals the quintal, which price it retained until the independence of Mexico. When the commerce was thrown open, the price of mercury varied from 50 to 70 piastres. This state of things remained until a powerful capitalist being appointed adjudicatory of the produce of the mines of Almadra, the price rose to 130 piastres, and even 150 piastres, as the mines were more or less distant from the sea; this high and exorbitant price has not a little contributed to paralyse, or at least retard, the metallurgy. M. Duport gives thus, the history of Mexican amalgamation, is commanding by describing the mechanical preparations, the different phases of operation, as well as the theories which have been successively given to this ingenious process. He shows us that Sonneschmidt, considering the action of marine salt, and the magnetism as bordering on the electro-negative elements which these compositions contain, M. Kertes announcing the faculty which a solution, saturated with marine salt, has to dissolve the chloride of silver, and the influence of the bicloride of copper. All these successive discoveries are the bases of the theory of amalgamation, but there are yet a quantity of facts to which we are indebted to M. Duport, and we shall proceed in a following Number to detail as clearly and briefly as possible the principal phenomena of amalgamation, such as he has described them.

[Note.—A kilometre is 1000 metres, or about 540 yards.—A kilogramme is 1000 grammes; and a gramme is 2 lbs. weight.]

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## ON THE METALLIFEROUS CONTENTS OF LODES.

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ON THE METALLIFEROUS CONTENTS OF LODES.

"On the Relative Position of the Yellow and Vitreous Sulphates of Copper in the Lodes of Pembroke Mine." By H. Taylor, Esq., F.G.S.—I am induced, by what fell from the president during a conversation with him respecting the local relations of the yellow and grey copper ores in the mines of this county, to offer this brief notice of the very striking difference in the character of the ores contained by the lodes which were formerly worked in the Pembroke Mine, and now in Boscombe, one of the Charlestown Mines, which I have observed as the workings of the mine have advanced westward. In the eastern part of Pembroke, which is near the cliffs of St. Austell Bay, the ore was a strong yellow sulphuret; in the central portion of Pembroke Mine, black and grey ores occurred as well as yellow; in the western part of the mine, the black and grey ores prevailed, although the veins still produced some yellow sulphuret, particularly where it was worked to the greatest depth. In Boscombe, which is considerably further west on the course of the same lode, some rich bunches of grey copper, accompanied by black oxide of copper, have been found at shallow levels; associated with these ores were yellow sulphurets, containing an unusually high produce of copper, and being thickly coated with grey and black ore. In this locality, however, a still more remarkable change occurs in the presence of tin in considerable abundance, in some places constituting portions of the lode distinct from those containing copper, but in others intimately mixed with the richest portions of copper ores. The further progress of the works westward has proved the almost entire disappearance of copper from these lodes, while they have become regularly productive of tin. The remains of some ancient workings at a short distance further west than those recently made, and, although still in kilns, being on the flank of the granite hill, on the summit of which the celebrated Carne-class tin mine is situated, show no trace of copper, and present the mineral characters which are common in tin lodes of that district. Parallel to the lodes which I have here noticed are, on the north-east, Crinnis lodes, and on the south, the very large and rich lode which formerly produced copper in such large quantities in Great Crinnis Mine, situated on the cliff of St. Austell Bay, and has in later years been extensively worked for tin in Charlestown Mines. I have good reason to believe that changes in the metalliferous contents, very similar to those I have described as occurring in the Pembroke lodes, characterise those which are parallel to them in their locality, but I have not had the same opportunity of tracing them in their whole course; I may, however, notice, that so completely has the Great Crinnis lode changed its character as it has been explored westward, that in the Charlestown mines I have not found it to contain any copper, except in a few hand specimens, in which very thin flakes of native copper have been found curiously interspersed in hard tinstone. I regret that the haste with which I have been obliged to prepare this brief sketch has not allowed me to do more than to notice generally some of the most striking features of this case, as I am aware that to be of any value many and precise details are requisite—descriptive of the variety in the earthy mineralisation of the veins; of the disturbances in their course, occasioned by cross courses and sides, which in this case are very considerable; as well as of the character of the including rocks. There is one circumstance which it is right that I should particularly mention, as we are taught by Mr. R. W. Fox, to consider it of importance in the explanation of the changes which may have occurred in the metalliferous contents of lodes subsequently to their original deposition; this is, that the kilns in contact with those parts of the lodes which contain the grey and black ores are stained a bright red colour—this is remarkably the case in parts of Pembroke Mine and in Boscombe, but not invariably so, and I am inclined to think that this staining does not extend to any great depth from the surface, even although the veins continue to contain grey ores.—*Trans. of the Geological Society of Cornwall.*

**AMERICAN COAL TRADE.**—The Cincinnati Chronicle assigns appropriate importance to the coal trade in the Valley of the Mississippi, which, although now only in its earliest, is destined to become an object of vast concern. In the year 1833, there were received at New Orleans from the interior 94,129 bushels of coal, while during the present year, the receipts therefrom have been some quarter to 255,500 bushels—being a ten-fold increase in ten years. The Chronicle remarks that the trade in Western coal at New Orleans, however, is only an evidence of the increase, not of that quantity. The consumption of coal at Cincinnati is four times that of New Orleans, and the importance of the trade has been nearly as great.—*Miner's Journal* (U. S.).

**THE IRON TRADE.**—We are happy to have an opportunity of announcing the starting of a new forge at the Dowlais Iron-Works, which commenced working on Wednesday, the 23rd ult. An immense mass of building and machinery, consisting of twelve puddling furnaces, with steam-engine, boilers, stack, rolls, &c., was put into operation. In the heartful satisfaction of all who witnessed this addition to the means of obtaining a living by the hard-working population of the district. Sir J. Guest, with his two eldest sons, was on the premises by ten o'clock, and inspected the whole of the works, which are erected in the most substantial style; and at eleven o'clock, Lord Hertford Guest, Esq. (the eldest son) turned on the steam, when the gigantic machinery commenced its operations in the most efficient and satisfactory manner, and three balls of puddled iron were rolled into bars, amidst the loud cheers of the assembled multitude. About forty gentle men, connected with the works, sat down to a splendid supper, after which conviviality was kept up until a late hour, the principal expression of feeling being—*succes to the Dowlais Iron-Works, and the persistent additional exertions must succeed.*

~~COAL~~ NEAR NEWPORT.—**NEWPORT AND NANTYGLO RAILWAY.**—A vein of coal was discovered lately on the property of Charles Williams, Esq., of Cwmpathys, in the neighbourhood of Pontypool, which measures seven feet thick. The contemplated line of railway from Newport to Nantyglo passes through the land; and when this vein is worked, as will soon, probably, be the case, a few more tons will be thrown into the scale of argonite by carrying out that necessary undertaking—the Newport and Nantyglo Railway.—*Monmouthshire Herald.*

**THE SULPHUR TRADE.**—According to the *National*, the indemnity awarded to the English merchants lost by the monopoly of the sulphur trade in Sicily being 180,000 Neapolitan ducats, those creditors demanded 6 per cent. interest

at the Nagopitan Government has determined on paying them ready money.

**East Wangan Mine Silver Lead Mine.**—A correspondence informs us that a dividend of \$64 per 1900-share has just been declared by the proprietors of this undertaking, after payment of which, a balance remains in hand of \$75000, while it is calculated that the result for the months of Septem-

**THE MARSH. SARTOR.**—It is rather dangerous for a Journal to make itself the vehicle of one of those pieces of news, whose character necessarily is calculated to awaken the suspicion of most readers; we, therefore, deem it right, in giving the following account, to state that we do not make ourselves responsible for its truth in any way, merely repeating what has been related to us by a person whose veracity has been fully unexceptioned. Our informant states that a party of engineers are at present engaged at Marseilles in the construction of a naval machine, the principle of which, as follows, has been long known in England (the classic country of modern industry), in which he has studied the elements of the theory which he is now attempting to put into practice. The plan of these experiments is sketched at Notre Dame de la Paix, and we are told that the attempts of the economists have not been attended with success. Their machine represents a bird in shape, and bears close resemblance to the one so well known in England; the wings, composed of a slight frame of wood-work, covered with silk, are about to be fixed to the body of the machine, and three or four more weeks will suffice to bring it to perfection. Paris, we are told, is to be the first place honoured by the westerners party, who hope to accomplish their flight in from four to six hours; the time of day fixed for their departure is the evening. No one is to be admitted to partake the dangers and expense of this venture, but a young lady, who has lately become the wife of one of the party's best informants, receives the highest credit by this extraordinary circumstance; we repeat, we do not vouch for the correctness of this.



